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10/624,567	07/23/2003	Takatoshi Miyahara	1965.1009	6611

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EXAMINER	
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1634	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/624,567	MIYAHARA ET AL.	
	Examiner	Art Unit	
	Robert T. Crow	1634	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *14 January 2009*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-9,11 and 12* is/are pending in the application.

4a) Of the above claim(s) *12* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-9 and 11* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 14 January 2009 has been entered.

Status of the Claims

2. This action is in response to papers filed 14 January 2009 in which claim 1 was amended, no claims were canceled, and no new claims were added. All of the amendments have been thoroughly reviewed and entered.

The previous rejections under 35 U.S.C. 103(a) not reiterated below are withdrawn in view of the amendments. Applicant's arguments have been thoroughly reviewed and are addressed following the rejections necessitated by the amendments.

Claims 1-9 and 11 are under prosecution.

3. It is noted that claim 2 is marked "preciously presented," which appears to be a typographical error.

4. The following rejections are new rejections necessitated by the amendments.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

7. Claims 1, 3-7, and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Caillat et al (European Patent Application Publication No. EP 0 882 981 A1, published 12 September 1998) in view of Ackley et al (PCT International Publication No. WO 99/42558, published 26 August 1999) in view of Hashimoto et al (U.S. Patent No. 5,776,672, issued 7 July 1997) as evidenced by the online dictionary at Merriam-Webster.com, and, as applied to claim 5, as further evidenced by the online dictionary at dictionary.cambridge.org, and, as applied to claim 9, as further evidenced by the online dictionary at Merriam-Webster.com.

It is noted that citations of Caillat et al are from U.S. Patent 6,126,800, which is an English language equivalent of the European Patent Application.

Regarding claim 1, Caillat et al teach a detection chip in the form of Figure 5, which shows a body having a depression; namely, a cuvette 252, which is a depression, formed as a depression within the body comprised of substrates 250 and 256 (Figure 5). Body 250/256 includes substrate 254, heater 264, and chip 210, which collectively form the base of the body (Figure 5 and column 5). Cover 268 rests above the body (Figure 5) to form the cuvette, which is the instantly claimed internal enclosed space. A plurality of measuring electrodes in the form of analysis electrodes 212 are formed on the base of the depression, as is counter electrode 215 (Figure 6 and column 5, line 63-column 6, line 25). Caillat et al further teach the measuring electrodes 212 are lined with probes (column 5, lines 40-45) so that the probes are immobilized (i.e., grafted) onto the measuring electrodes (column 1, lines 50-64). The probes are DNA probes, which are oligonucleotides (column 1, lines 20-25); thus, each of the plurality of measuring electrodes 212 has an oligonucleotide are immobilized on the surface of the electrode.

Caillat et al also teach the enclosed internal space allows hybridization between a DNA sample and the immobilized oligonucleotide because the cuvette encloses the DNA probes for binding to sample DNA (column 1, lines 17-20). The teaching of DNA encompasses gene samples. As noted above, electrode 215 is a counter electrode, which is arranged within the enclosed internal space (Figures 5-6 and column 5, line 63-column 6, line 25). Caillat et al also teach measurement current is selectively measured

between a given analysis electrode and the counter electrode (column 6, lines 15-21), which is interpreted as measuring an electric current variation.

It is noted that the courts have held that "while features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus must be distinguished from the prior art in terms of structure rather than function." *In re Schreiber*, 128 F.3d 1473, 1477-78, 44 USPQ2d 1429, 1431-32 (Fed. Cir. 1997). In addition, "[A]pparatus claims cover what a device *is*, not what a device *does*." *Hewlett-Packard Co. v. Bausch &Lomb Inc.*, 909 F.2d 1464, 1469, 15 USPQ2d 1525, 1528 (Fed. Cir. 1990) (emphasis in original). Therefore, the various uses recited in the claim (e.g., receiving gene samples, applying voltage before and after hybridization, detecting variation between the currents before and after hybridization based on mismatches, and detection of genes) fail to define additional structural elements to the device of claim 1. Because the prior art teaches the structural elements of the claim , the claim is obvious over the prior art.

While Caillat et al teaches the connection terminals 258 on the support (Abstract), Caillat et al do not teach each of the measuring electrodes and the common electrode are each connected to one of a plurality of terminals.

However, Ackley et al teach a detection chip in the form of an array of microlocations 68 (Figure 3 and pages 22-23), which are electrodes having specific binding entities attaches thereon (pages 22-23). The each of measuring electrodes 68 are connected to connectors 64 and traces 66 (Figure 3 and pages 22-23), and each of electrodes 70, 72, 74, and 76 are also attached to connectors and traces (Figure 3). A

review f the specification yields no limiting definition of the structure encompassed by the claimed "terminal." Thus, connectors of Ackley et al are terminals in accordance with the definition of a "terminal" as "a device attached to the and of an electrical apparatus for convenience in making connections" provided by the online dictionary at Merriam-Webster.com, and the claim has been given the broadest reasonable interpretation consistent with the teachings of the specification regarding a "terminal" (*In re Hyatt*, 211 F.3d1367, 1372, 54 USPQ2d 1664, 1667 (Fed. Cir. 2000) (see MPEP 2111 [R-1]). Ackley et al also teach the terminals have the added advantage of allowing controlled transport of any material to any specific electrode (pages 22-23). Thus, Ackley et al teach the known technique of connecting one of a plurality of terminals to each of the electrodes of the device.

It would therefore have been obvious to a person of ordinary skill in the art at the time the claimed invention was made to have modified the device comprising a plurality of measuring electrodes and a collection electrode as taught by Caillat et al so that each an every electrode is connected to one of a plurality of terminals as taught by Ackley et al to arrive at the instantly claimed device with a reasonable expectation of success. The ordinary artisan would have been motivated to make the modification because said modification would have resulted in a device having the added advantage of allowing controlled transport of any material to any specific electrode as explicitly taught by Ackley et al (pages 22-23). In addition, it would have been obvious to the ordinary artisan that the known technique of connecting one of a plurality of terminals to each of the electrodes of the device as taught by Ackley et al could have been applied to the

device of Caillat et al with predictable results because the known technique of connecting one of a plurality of terminals to each of the electrodes of the device as taught by Ackley et al predictably results in a reliable electrical connection between the electrodes and the power source.

While Ackley et al teach the detection of single point mutations (page 5), neither Caillat et al nor Ackley explicitly teach the immobilized oligonucleotides and electrodes are for detecting point mutations.

However, Hashimoto et al teach electrodes having single stranded nucleic acid probes (i.e., oligonucleotides) attached immobilized thereon (Abstract). The probes and electrodes detect point mutations electrochemically (Example 30). Hashimoto et al also teach the electrodes and probes have the added advantage of allowing detection of an extremely small amount of analyte in a test sample (column 53, lines 55-60). Thus, Hashimoto et al teach the known technique of having immobilized oligonucleotides and electrodes for detecting point mutations.

It would therefore have been obvious to a person of ordinary skill in the art at the time the claimed invention was made to have modified the chip of Caillat et al in view of Ackley et al, which detects a current between a given analysis electrode and the counter electrode during an analysis stage, so that the immobilized oligonucleotides and electrodes detect point mutations as taught by Hashimoto et al to arrive at the instantly claimed chip with a reasonable expectation of success. The ordinary artisan would have been motivated to make such a modification because said modification would have resulted in a chip having the added advantage of allowing detection of an

extremely small amount of analyte in a test sample as explicitly taught by Hashimoto et al (column 53, lines 55-60). In addition, it would have been obvious to a person of ordinary skill in the art at the time the claimed invention was made that the known technique of having immobilized oligonucleotides and electrodes for detecting point mutations as taught by Hashimoto et al could have been applied as the probes and electrodes in the chip of Caillat et al and Ackley et al with predictable results because the known technique of having immobilized oligonucleotides and electrodes for detecting point mutations as taught by Hashimoto et al predictably results in electrodes and probes useful in the detection of genetic samples.

Regarding claim 3, the chip of claim 1 is discussed above. Caillat et al further teach the cover is transparent; namely, the cover is glass and allows light to pass through (column 5, lines 50-60).

Regarding claim 4, the chip of claim 1 is discussed above. Caillat et al further teach the measuring electrodes form an array; namely, Figure 6 shows measuring electrodes 212 in an array.

Regarding claim 5, the chip of claim 1 is discussed above. Caillat et al further teach the common electrode is arranged so as not to contact the measuring electrodes because Figure 6 shows counter electrode 215, which is the common electrode, does not contact measuring electrodes 212, as evidenced by the online dictionary at dictionary.cambridge.org, which defines "contact" as "when two things touch each other." Figure 6 clearly shows that while common electrode 212 does not touch measuring electrodes 215. In addition, a review of the specification yields no limiting

definition of "contact." Thus, the claim has been given the broadest reasonable interpretation consistent with the teachings of the specification regarding "contact."

Regarding claim 6 the chip of claim 1 is discussed above. Caillat et al further teach different electrodes of the chip are covered with different reactants (column 2, lines 3-20), wherein the reactants are probe molecules that are DNA probes (column 1, lines 20-25), which are oligonucleotides.

Regarding claim 7, the chip of claim 1 is discussed above. Ackley et al so teach the plurality of measuring electrodes is combined with a plurality of wirings respectively connected in a one to one basis (Figure 3).

Regarding claim 9, the chip of claim 1 is discussed above. A review of the specification yields no limiting definition of a "card." The online dictionary of Merriam-Webster at m-w.com defines a card as "a flat, stiff, usually small and rectangular piece of material (as paper, cardboard, or plastic) usually bearing information." Caillat et al teach the chip is flat (Figure 5) and is made of a glass fiber/epoxy resin composite material (column 5, lines 10-15), which is interpreted as "stiff." Thus, Caillat et al teach the chip is a "card," and the claim has been given the broadest reasonable interpretation consistent with the teachings of the specification regarding a "card."

8. Claims 2 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Caillat et al (European Patent Application Publication No. EP 0 882 981 A1, published 12 September 1998) in view of Ackley et al (PCT International Publication No. WO 99/42558, published 26 August 1999) in view of Hashimoto et al (U.S. Patent No. 5,776,672, issued 7 July 1997) as evidenced by the online dictionary at Merriam-Webster.com as applied to claim 1 above, and further in view of Wilding et al (U.S. Patent No. 5,587,128, issued 24 December 1996).

Regarding claim 2, the chip of claim 1 is discussed above in Section 7.

Neither Caillat et al, Ackley et al, nor Hashimoto et al teach injection holes extending through the body and the cover into said depression.

However, Wilding et al teach a device for detecting polynucleotides by measuring conductivity (column 21, lines 15-20). The device of Wilding et al comprises a body having a depression (Figure 2B), a cover to be fixed to said body from above said depression (Figure 2B), an enclosed internal space part, formed by said depression in said body as a result of said cover being fixed to said body (e.g., the device is sealed by the cover; column 4, lines 15-20 and Figure 2B). Wilding et al also teach Figure 1C, which shows injection holes 16 extending through cover 12 and into the channel 22, which is a depression in the body of the device (column 16, lines 25-46). Wilding et al also teach the added advantage that the ports allow addition of the sample and reagents and the withdrawal of products (column 16, lines 25-46) while maintaining a seal over the device (column 4, lines 16-24). Thus, Wilding et al teach the known

technique of providing injection holes extending through the cover into the depression of the device.

While Wilding et al do not specifically teach the injection holes on two opposing surfaces of each of said body and said cover, the courts have held that the rearrangement of parts within a device is obvious when the arrangement does not specifically modify the operation of the device (*In re Japikse*, 181 F.2d 1019, 86 USPQ 70 (CCPA 1950)). See MPEP §2144.04.

It would therefore have been obvious to a person of ordinary skill in the art at the time the claimed invention was made to have modified the chip of Caillat et al in view of Ackley et al and Hashimoto et al to further comprise the injection holes extending through the body and the cover as taught by Wilding et al, and rearranged in the obvious variant so as to be on two opposing surfaces of each of said body and said cover, to arrive at the instantly claimed chip with a reasonable expectation of success. The ordinary artisan would have been motivated to make such a modification because said modification would have resulted in a chip having the added advantage of allowing addition of the sample and reagents and the withdrawal of products while maintaining a seal over the device as explicitly taught by Wilding et al (column 16, lines 25-46 and column 4, lines 16-24). In addition, it would have been obvious to a person of ordinary skill in the art at the time the claimed invention was made that the known technique of having the obvious rearrangement of the injection holes extending through the body and the cover as taught by Wilding et al could have been applied to the chip of Caillat et al in view of Ackley et al and Hashimoto et al with predictable results because the known

technique of having the obvious rearrangement of the injection holes extending through the body and the cover as taught by Wilding et al predictably results in a chip that easily allows addition and removal of materials from the chip.

Regarding claim 11, the chip of claim 1 is discussed above. While Caillat et al teach heating elements in the form of resistance heater 265 (Figure 5 and column 6, lines 40-50), neither Caillat et al, Ackley et al, nor Hashimoto et al teach Peltier elements.

However, Wilding et al teach a device for detecting polynucleotides by measuring conductivity (column 21, lines 15-20). The device of Wilding et al comprises a body having a depression (Figure 2B), a cover to be fixed to said body from above said depression (Figure 2B), an enclosed internal space part, formed by said depression in said body as a result of said cover being fixed to said body (e.g., the device is sealed by the cover; column 4, lines 15-20 and Figure 2B). Wilding et al also teach the device has Peltier heating elements which provide the added advantage of providing both heating and cooling functions (column 17, lines 15-17). Thus, Wilding et al teach the known technique of using Peltier heating elements as heating elements.

It would therefore have been obvious to a person of ordinary skill in the art at the time the claimed invention was made to have modified the chip comprising heating elements as taught by Caillat et al in view of Ackley et al and Hashimoto et al so that the heating elements are the Peltier devices as taught by Wilding et al to arrive at the instantly claimed chip with a reasonable expectation of success. The ordinary artisan would have been motivated to make such a modification because said modification

would have resulted in a chip having the added advantage of providing both heating and cooling functions as explicitly taught by Wilding et al (column 17, lines 15-17). In addition, it would have been obvious to a person of ordinary skill in the art at the time the claimed invention was made that the known technique of using Peltier heating devices as taught by Wilding et al could have been used as the heating devices on the chip of Caillat et al in view of Ackley et al and Hashimoto et al with predictable results because the known technique of using Peltier heating devices as taught by Wilding et al predictably results in a heating elements know to be reliable on genetic assay chips.

9. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over by Caillat et al (European Patent Application Publication No. EP 0 882 981 A1, published 12 September 1998) in view of Ackley et al (PCT International Publication No. WO 99/42558, published 26 August 1999) in view of Hashimoto et al (U.S. Patent No. 5,776,672, issued 7 July 1997) as evidenced by the online dictionary at Merriam-Webster.com as applied to claims 1-3, and further in view of Pace (U.S. Patent No. 4,225,410, issued 30 September 1980).

It is noted that while claim 9 has been rejected under 35 USC 103(a) as described above in Section 7, the claim is also obvious using the alternate interpretation outlined below.

Regarding claims 8-9, the chip of claim 1 is discussed above in Section 7.

Neither Caillat et al, Ackley et al, nor Hashimoto et al teach a measuring apparatus to which the chip becomes electrically connected and which measures

current (i.e., claim 8), or that the chip is configured to be inserted into and removed from said apparatus; i.e., an insertable cassette (i.e., claims 8 and 9).

However, Pace teaches a chip in the form of an integrated array of electrodes (Title and Abstract) which is formed as cassette 10 (i.e., claim 9) that is insertable in to and removable from an apparatus in the form of analyzing device 30, which electrically connects to the detecting chip (Figure 3 and column 7, lines 35-55). The analyzer (i.e., measuring apparatus) is capable of detecting an electric current; namely, the chip provides a current that corresponds to a chip measurement (i.e., claim 8; column 10, lines 1-25). Pace also teaches the insertable chip and the analyzer have the added advantage of allowing simultaneous analysis of a number of analytes at the scene of an emergency or a patient's bedside (column 2, lines 15-35). Thus, Pace teaches the known technique of providing a measuring apparatus to which the chip becomes electrically connected and which measures current (i.e., claim 8), or that the chip is configured to be inserted into and removed from said apparatus; i.e., an insertable cassette (i.e., claims 8 and 9).

It would therefore have been obvious to a person of ordinary skill in the art at the time the claimed invention was made to have modified the chip as taught by Caillat et al in view of Ackley et al and Pace et al so that the chip becomes electrically connected to a measuring apparatus which measures current (i.e., claim 8) and so that the chip is configured to be inserted into and removed from said apparatus (i.e., claims 8 and 9) as taught by Pace to arrive at the instantly claimed device with a reasonable expectation of success. The ordinary artisan would have been motivated to make the modification

because said modification would have resulted in a device having the added advantage of allowing simultaneous analysis of a number of analytes at the scene of an emergency or a patient's bedside as explicitly taught by Pace (column 2, lines 15-35). In addition, it would have been obvious to the ordinary artisan that the known technique of providing a measuring apparatus to which the chip becomes electrically connected and which measures current and that the chip is configured to be inserted into and removed from said apparatus as taught by Pace could have been applied to the chip of Caillat et al in view of Ackley et al and Hashimoto with predictable results because the known technique of providing a measuring apparatus to which the chip becomes electrically connected and which measures current and that the chip is configured to be inserted into and removed from said apparatus as taught by Pace predictably results in a configuration useful for immediate diagnosis of a patient's condition at a variety of different locations.

Response to Arguments

10. Applicant's arguments filed 12 November 2008 (hereafter the "Remarks") have been fully considered but they are not persuasive for the reason(s) listed below.

A. Applicant argues on pages 5-6 of the Remarks that Caillat et al do not teach applying voltages before and after hybridization, detecting the variation in current, and that the variation depends on the number of mismatched base pairs.

However, as noted above, apparatus claims cover what a device *is*, not what a device *does*. Therefore, the various uses recited in the claim (e.g., receiving gene

samples, applying voltage before and after hybridization, detecting variation between the currents before and after hybridization based on mismatches, and detection of genes) fail to define additional structural elements to the device of claim 1. Because the prior art teaches the structural elements of the claim, the claim is obvious over the prior art.

B. Applicant also argues on pages 6-7 that Hashimoto et al teach detection of fluorescence.

However, Hashimoto et al explicitly teach the electrochemical detection of redox current in the presence of intercalating agents, including acridine orange (column 4, lines 5-65). Thus, Hashimoto et al is not limited to fluorescence detection.

In addition, cited Example 30 of Hashimoto et al does not mention fluorescence detection **at all**. Thus, Applicant's arguments regarding fluorescence with respect to Example 30 are merely inappropriate conjecture without any evidence. MPEP 716.01(c) makes clear that "[t]he arguments of counsel cannot take the place of evidence in the record" (*In re Schulze*, 346 F.2d 600, 602, 145 USPQ 716, 718 (CCPA 1965)). Thus, because Applicant's arguments are not supported by the evidence presented in Hashimoto, Applicant's arguments are incorrect.

It is also noted that the Response above should not be construed as an invitation to file an after final declaration. See MPEP 715.09 [R-3].

Thus, contrary to Applicant's assertions on page 7 of the Remarks, Hashimoto et al do not teach away from the claimed invention because Hashimoto et al explicitly

teach the electrochemical detection of redox current in the presence of intercalating agents, including acridine orange (column 4, lines 5-65).

C. Applicant's arguments with respect to the previous rejections of the claims have been considered but are moot in view of the new ground(s) of rejection necessitated by the amendments.

Conclusion

11. No claim is allowed.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Robert T. Crow whose telephone number is (571)272-1113. The examiner can normally be reached on Monday through Friday from 8:00 am to 4:30 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ram Shukla can be reached on (571) 272-0735. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Robert T. Crow/
Examiner, Art Unit 1634

Robert T. Crow
Examiner
Art Unit 1634